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F-16 TRAINING MEDIA SUPPORT REQUIREMENTS.(U)  
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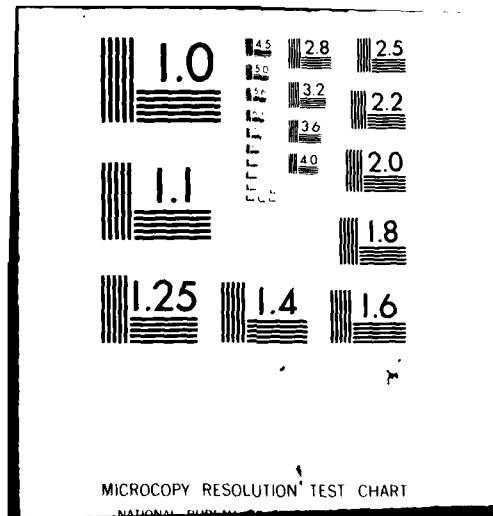
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F-16 AIRCREW TRAINING DEVELOPMENT PROJECT

See also ~~AD-A099 844~~

Contract No. F02604-79-C8807

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F-16 TRAINING MEDIA  
SUPPORT REQUIREMENTS

DEVELOPMENT REPORT No. 32  
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Prepared in fulfillment of CDRL no. B044

by

10 D.R./Farrow

COURSEWARE, INC.  
10075 Carroll Canyon Rd.  
San Diego, CA 92131  
(714) 578-1700

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## PREFACE

This report was created for the F-16 Aircrew Training Development Project contract no. F02604-79-C8875 for the Tactical Air Command to comply with the requirements of CDRL no. B044. The project entailed the design and development of an instructional system for the F-16 RTU and instructor pilots. During the course of the project, a series of development reports was issued describing processes and products. A list of those reports follows this page. The user is referred to Report No. 34, A Users Guide to the F-16 Training Development Reports, for an overview and explanation of the series, and Report No. 35, F-16 Final Report, for an overview of the Instructional System Development Project.

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F-16 AIRCREW TRAINING  
DEVELOPMENT PROJECT REPORTS

Copies of these reports may be obtained by writing the Defense Technical Information Center, Cameron Station, Alexandria, Virginia 22314. All reports were reviewed and updated in March 81.

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## EXECUTIVE SUMMARY

Training media support requirements are those personnel, facilities, equipment, and materials/supplies that must be purchased, installed, and maintained in order to operate any given instructional medium. These requirements may be viewed as costs to be considered before deciding to procure a given medium or media mix, or resources that must be secured and in place before an instructional system can open its doors to students. In either case, they represent "hidden costs" that have not always been adequately considered before establishing an instructional system.

Section 1.0 describes the purpose of the document as well as the general format and approach. Section 2.0 provides a comprehensive list of training media support requirements, including a description of each resource. Section 3.0 lists all of the potential training media, both academic and performance, and provides tables which specify the support requirements of each. Section 4.0 lists general considerations to be weighed when evaluating the support requirements of various media.



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## F-16 TRAINING MEDIA SUPPORT REQUIREMENTS

### 1.0 INTRODUCTION

The purpose of this report is to document the types of support required by various instructional media. Before selecting and procuring a media device, it is important to determine the total array of resources that must also be procured and maintained in order to support that device. Instructional media must be stored, utilized, serviced, monitored, and supplied with current coursewares. All this requires personnel, facilities, equipment, and materials/supplies. Without these supporting resources, the benefits of the training medium are either degraded or obviated completely. These resources may be viewed as the "hidden costs" or media device procurement, or as a "shopping list" of items and personnel that must be maintained in order to conduct a functional training program.

This document does not offer fine-grained analysis and direction as to the number of pencils or desks to order. That level of detail may be found in development report number 21, "The F-16 Instructional System Cost Study Report." The purpose of the present report is to provide more general information to assist in selecting among a range of instructional media. Once these decisions have been made, the information in the cost study is helpful in implementing the system. For the initial decision-making, however, the level of detail documented in this report is far more appropriate.

### 2.0 CATEGORIES OF MEDIA SUPPORT

For convenience of discussion, the training media support requirements have been subdivided into four basic categories: personnel, facilities, equipment, and materials/supplies. Section 2.0 lists the major requirements under each of these headings and provides a brief definition of each. Section 4.0 will describe each training medium in terms of these requirements.

## 2.1 Personnel

Five basic types of personnel are required to support the instructional media: instructors, Learning Center personnel, computer support personnel, training device support personnel, and instructional materials maintenance personnel. The level of support provided by these categories of personnel varies greatly, from simple ordering of supplies to the disassembly and repair of major equipment. It is beyond the scope of this discussion to include the personnel who in turn support these personnel, such as secretaries, clerks, and administrators.

### 2.1.1 Instructors

The course management plan currently specifies five types of instructor personnel: flight instructors, academic instructors, simulator instructors, trainer instructors, and Learning Center instructors. These personnel operate the media equipment, monitor its working condition, report malfunctions, and perform operator level maintenance. It should be noted that although the five types of instructors are listed separately, the same individual could fulfill the role of different types of instructor, and most probably will. This will be determined by the amount of skill required for each role, the number of instructors assigned to the Squadron, and the amount of time spent instructing versus time spent performing other duties, such as administration, proficiency training, flying, and TDY.

2.1.1.1 Flight Instructors: Operate F-16A and F-16B aircraft.

2.1.1.2 Academic Instructors: Conduct lectures, seminars, and tutorial sessions in academic classrooms; operate overhead projectors, tape recorders, motion picture projectors; student response systems; and demonstrating models and actual equipment.

2.1.1.3 Simulator Instructors: Conduct simulator device sessions and operate the Operational Flight Trainer (OFT), Weapons System Trainer (WST), and Dynamic Systems Simulator (DSS).

2.1.1.4 Trainer Instructors: Conduct trainer device sessions and operate the Cockpit Familiarization Trainer (CFT) and Egress Procedures Trainer (EPT).

2.1.1.5 Learning Center Instructors: Answer individual student questions in the Learning Center and monitor student workbooks, tapeslides, audiotapes, videotapes, programmed texts, workbook slides, and training manuals.

### 2.1.2 Learning Center Personnel

In addition to one full time Learning Center instructor, the Learning Center also requires a supervisor and operator during hours of operation.

**2.1.2.1 Learning Center Operator:** Controls and checks out training media programs and materials. He also performs shelf maintenance of instructional materials, maintains records of student use of media equipment, and records student progress in terms of which lesson materials each student has completed. He also performs first line maintenance on tape players, videotape players, slide projectors, and motion picture projectors.

**2.1.2.2 Learning Center Supervisor:** Trains, supervises, and evaluates Learning Center operators. As an occasional stand-in for the Learning Center operator, he is responsible for the shelf maintenance of instructional materials and first line maintenance and repair of Learning Center based media.

### **2.1.3 Computer Support Personnel**

Both computer assisted instruction and computer managed instruction have been recommended for use in the F-16 training system. If the Air Force adopts either of these recommendations, computer support personnel will be required to maintain the system. At the minimum, this means a computer programmer, computer operator, and computer maintenance personnel. The computer operator function may be carried out by a Learning Center operator, a computer programmer, or a separate computer operator.

**2.1.3.1 Computer Programmer:** Programs the training system computer to manage and/or conduct instructional and testing functions. The programmer may conceptualize and execute these functions, or merely execute the functions conceptualized by administrative personnel. The programmer also performs operator level maintenance on the computer system.

**2.1.3.2 Computer Operator:** Monitors the performance of the training system computer and corrects any problems on a real-time basis. This function will most likely be performed by the computer programmer, but could be a separate job title, as described in Section 3.1.3.

**2.1.3.3 Computer Maintenance Personnel:** Inspect, checkout, troubleshoot, service, repair in place, remove/install, disassemble/assemble, calibrate, align, and operate the training system computer. All servicing beyond the operator level maintenance performed by the computer programmer is performed by computer maintenance personnel.

### **2.1.4 Training Device Support Personnel**

The training devices used for F-16 training will be of two types: academic or Learning Center devices, and performance related or simulation training devices. The Learning Center devices are operated by the students themselves, whereas the simulation devices require either instructors or specialized equipment operators. Training device support personnel include

device operators, device managers, and device maintenance and repair personnel.

**2.1.4.1 Training Device Operator:** Operates and performs operator level maintenance on training equipment. Learning Center devices (tape players, videotape players, slide projectors, and film projectors) are operated by students, with Learning Center personnel performing operator level maintenance. Simple training devices, such as the CFT, are operated by the training device instructor. More complex devices, such as the WST, are operated by training device specialists, who augment but do not replace the training device instructor or simulator instructor.

**2.1.4.2 Training Device Manager:** Trains, supervises, and evaluates training device operators for both Learning Center-based media and simulation media. As a stand-in for the training device operator, he both operates and performs operator level maintenance on training devices. This duty may be performed by a training device instructor or simulator instructor.

**2.1.4.3 Training Device Maintenance and Repair Personnel:** Inspect, checkout, troubleshoot, service, repair in place, remove/install, disassemble/assemble, calibrate, align, and operate both Learning Center and simulation training devices. All servicing beyond the operator level maintenance performed by students, instructors, and Learning Center personnel is performed by training device maintenance and repair personnel.

#### **2.1.5 Instructional Materials Maintenance Personnel**

In order to maintain an effective training system, instructional materials must be reviewed and updated on a regular basis. This requires a staff of development personnel to design, develop, and produce materials, including computer support personnel in the case that computer assisted instruction is implemented as part of the F-16 training system. This computer support may be provided by developers on the OTD team, or by the computer support personnel described in Sections 2.1.3.1 and 2.1.3.2. Instructional materials maintenance personnel include instructional designers, subject matter experts, media specialists, production specialists, and computer operators.

**2.1.5.1 Instructional Designer:** Analyzes the training system on a continual basis, identifying the need for the creation or modification of lesson materials, and both designing and developing those new materials. The contractor provides this type of support during the initial implementation of the program, but the OTD team must assume responsibility for these functions upon contractor departure and for the life of the project.

**2.1.5.2 Subject Matter Expert (SME):** Provides the technical input to the instructional designer-SME team to allow the timely identification of instructional deficiencies and the

development of new or modified lesson materials to address those deficiencies. It is anticipated that the OTD team members will fill the twin roles of instructional designer and SME once the contractor leaves. SMEs have traditionally been drawn from the instructor pilot pool, although operational F-16 pilots provide an equally qualified back-up source.

**2.1.5.3 Media Specialist:** Produces the drawings, photographs, diagrams, and other audiovisual artwork required to maintain or generate lesson materials. These artists work from specifications determined by the instructional designer-SME teams described in Section 2.1.5.2. These individuals may be provided separately to work on a contract basis, or their tasks may be performed by Squadron graphics support personnel. In any case, full time media support will not be required.

**2.1.5.4 Production Specialist:** Oversees the production of finished lesson materials, especially complex productions such as videotapes and motion pictures. The production specialist coordinates with the instructional designers, SMEs, and media specialists to produce professional quality training materials. He is responsible for overseeing the reproduction of all lesson materials as well.

**2.1.5.5 Computer Programming:** Programs the training system computer to accommodate new or revised computerized lesson materials. This function does not represent a full time position, and may be satisfied by the computer programmer or operator assigned to the computer support facility and described in Section 2.1.3.1 and 2.1.3.2. This position will become a full time function if the Air Force implements a computer assisted instructional system, as recommended in development report no. 20, "F-16 Media Selection and Utilization Plan Report".

## **2.2 Facilities**

The major facilities required to support the media of the F-16 training system include a Learning Center, classrooms, training device facilities, a computer facility, an instructional materials development facility, and a production/reproduction facility. Each of these facilities includes the office space, administrative support space, storage space, equipment space, and work space required to support the personnel working there.

### **2.2.1 Learning Center**

This facility provides the central location for the study of written and mediated instructional materials. It contains an instructional materials checkout/storage area, student study areas for viewing mediated and written lessons, instructors' offices, and an equipment repair area. The checkout/storage area acts as a centralized location for all lesson materials, controlling their use by students and instructors alike. It also pro-

vides storage space for replacement audiovisual equipment and a maintenance area for servicing that equipment. The student study area consists of a lounge, a room containing bare carrels for studying written materials, and a room containing mediated carrels for studying lessons on film, videotape, videodisc, slide, or tape. In the event that the Air Force elects to purchase a computer assisted instructional system, this area will be modified or replaced to include computer terminals for individual student use. The instructors' office space includes private offices where Learning Center instructors may tutor students individually or in small groups.

### **2.2.2 Classrooms**

These facilities provide areas for lectures, seminars, demonstrations, and other group learning experiences. Extra media equipment will be available for checkout at the Learning Center, allowing instructors to incorporate audiovisual lesson materials in their presentations. These rooms will also house the less complex training devices, such as panel mockups, cockpit mockups, and the CFT.

### **2.2.3 Training Device Facilities**

These facilities house the complex training devices, such as the OFT and WST, their maintenance areas, parts and equipment storage areas, and the office space for all operator and maintenance personnel. Each trainer usually requires its own individual building, with all required support space adjacent. Briefings and debriefings may be conducted in on-site briefing rooms, or in the classroom area. Specific space requirements for the CFT, cockpit mockup, and EPT are reported in development report no. 21, "F-16 Instructional System Cost Study Report."

### **2.2.4 Computer Facility**

The implementation of either computer managed instruction or computer assisted instruction will necessitate the allocation of a computer facility to house the major hardware and store the major software of the system. This facility will have numerous specialized requirements, such as temperature and moisture regulation, power supply, and computer flooring. It can be assumed that if either CAI or CMI are implemented a single computer facility will be established that may be adapted to later incorporate support of both systems.

### **2.2.5 Instructional Materials Development Facility**

This area includes the offices, working areas, and storage spaces for the instructional developer and SMEs. These spaces may stand alone, or be combined with the production/reproduction spaces under a single facility. Assuming that production/reproduction functions will be performed by existing base organizations, the OTD team spaces can be designated as the Instructional Materials Development Facility.

### **2.2.6 Production/Reproduction Facility**

This area includes office and working space for the media specialists and production specialists. The amount of art supplies and photographic equipment used and stored here requires considerable space per man. As indicated in Section 2.2.5, this function may be performed by existing base organizations, obviating the need for a separate facility to support the F-16 training system.

## **2.3 Equipment**

The array of equipment required to support the F-16 training effort is categorized by the facilities in which it is utilized or stored. For the purpose of this discussion, training devices are considered to be instructional media rather than equipment.

### **2.3.1 Learning Center Equipment**

The Learning Center consists of four basic areas, as described in Section 2.2.1. The materials checkout/storage area requires shelving for lesson materials and spare media devices, file cabinets for student records, and office equipment (chairs, desks, bookcases, typewriters, etc.) for the Learning Center operator and supervisor. The student study area requires bare and mediated study carrels (Federal Stock Number 6910004260982, 49 by 49 inches) and chairs. The student lounge should contain comfortable chairs and couches and storage lockers. The instructors' offices require standard office furniture, including a blackboard for student tutoring. The maintenance area requires all equipment necessary for the repair of audiovisual devices: electronic technician's tool kit, volt/ohm meter, soldering gun, oscilloscope, etc.

### **2.3.2 Classrooms**

These rooms will contain a blackboard, at least 20 chairs with folding writing area arms, a projection screen, and a lectern. Some classrooms may contain simulation training devices, such as panel mockups, cockpit mockups, stick and throttle trainers, or the CFT. Learning Center media, such as motion picture or slide projectors, will be used in classrooms but will not be stored there. Student response systems may be included in some classrooms.

### **2.3.3 Training Device Facilities**

These spaces will be equipped with all tools and equipment specified by the training device contractor, as well as the standard technician tool kit of Air Force issue. (The CFT and EPT development exhibits, for example, require these devices to be maintained with "standard hand tools".) They will also contain standard office furniture for all training device support personnel offices.



#### **2.3.4 Computer Facility**

This area will contain the basic elements of the computer itself, such as the central processing unit, high speed printer, and at least one terminal. Student and instructor terminals may, of course, be located anywhere on base. The offices of all computer support personnel will be located within the facility, and standard office furniture and equipment provided for their use. Again, all maintenance tools and equipment specified by the computer contractor will be provided to computer maintenance personnel.

#### **2.3.5 Instructional Materials Development Facility**

This facility, when separate from the production/reproduction facility, contains only the offices of the instructional designers and subject matter experts, and requires only standard office equipment and furnishings. There is a heavy requirement for lesson materials storage, however, so that a larger than average number of file cabinets and bookcases are required for each designer.

#### **2.3.6 Production/Reproduction Facility**

In addition to standard office equipment and furnishings for all facility personnel, there is a substantial requirement for specialized art equipment, including a photocopy machine, word processor, positive camera, camera table, special artist tables, light tables, photographic equipment, infrared copier, video recording/production equipment, and audio recording/editing equipment. This facility must produce and duplicate audiotapes, videotapes, slides, motion pictures, photographs, line drawings, and printed text.

### **2.4 Materials/Supplies**

As in the case of equipment, materials/supplies required to support the F-16 training effort are categorized by the facilities in which they are utilized and stored. In every case, the offices associated with each facility require standard office supplies, including pens, pencils, paper binders, paperclips, labels, typing ribbons, writing pads, and so on.

#### **2.4.1 Learning Center Materials/Supplies**

The Learning Center consists of four basic areas, as described in Section 2.2.1. The materials checkout/storage area requires a full inventory of lesson materials, including workbooks, lesson guides, tapeslide programs, workbook slides, videotapes, audiotapes, motion pictures, student and instructor device session guides, gradesheets, academic tests and answer keys, dash ones, avionics procedures manuals, checklists, and phase manuals.

The student study area requires only student supplies materials, such as notebooks, writing pads, and pencils. The same is true for the student lounge area and instructor offices. The audiovisual equipment repair area, on the other hand, requires consumable maintenance supplies, such as solder, wire, resistors, capacitors, bulbs, and so forth. Spare parts for all audiovisual equipment are also required.

#### **2.4.2 Classrooms**

The classrooms require only fresh supplies of chalk, grease pencils, blank overhead transparencies, and erasers. Classrooms containing training devices may require special supplies, such as slides and tapes for the CFT. The exact requirements of most part-task training devices will be determined at the time of their arrival.

#### **2.4.3 Training Device Facilities**

The main supplies required for these facilities are spare parts for the various trainers, based upon projected failure rates for those devices. Spare provisioning recommendations for the OFT will be the responsibility of the contractor, the Singer Company, Link Division. Requirements for the CFT and EPT will be specified by USAF ATC, responsible for developing and producing those two devices.

#### **2.4.4 Computer Facility**

The primary supplies required by this facility are computer paper and storage tapes. The quantity of these supplies required depends upon the level of implementation of CAI and CMI within the F-16 training system.

#### **2.4.5 Instructional Materials Development Facility**

This facility, when separate from the production/reproduction facility, contains only the offices of the instructional designers and subject matter experts, and requires only the standard office supplies enumerated in Section 2.4.

#### **2.4.6 Production/Reproduction Facility**

In addition to requiring a wide array of equipment, this facility also requires a wide array of supplies, including photocopy paper, word processor paper, drawing paper, marker pens, paints, tape, lettering materials, brushes, erasers, film, processing chemicals, slide mountings, slide trays, videotapes/cassettes, and audiotapes/cassetts. This facility requires materials and supplies to produce and duplicate audiotapes, videotapes, slides, motion pictures, photographs, line drawings, and printed text.

### 3.0 MEDIA SUPPORT REQUIREMENTS

Section 2.0 listed all of the types of media support, including personnel, facilities, equipment, and materials/supplies. This section will list and define all potential training media, as determined by the contractor and the F-16 OTD team, and present charts that match support requirements to specific media. Tables 3.1 and 3.2 identify the personnel required to support each medium, while Tables 3.3 and 3.4 identify the facility support required. Once the facilities are identified, both equipment and materials/supplies may be identified by reference to Sections 2.3 and 2.4, respectively. Additional tables are not required, as both equipment and materials/supplies requirements are organized and categorized by facility type in Section 2.0.

#### 3.1 Academic Media

The instructional media utilized in the F-16 training system are of two types, academic and performance. Performance media are those "hands-on" devices that allow the student to perform in a real or closely simulated job environment. Academic media are those "classroom" devices that emphasize the processing of verbal information that is prerequisite to performance in the job environment. The following academic media were identified by the contractor and F-16 OTD team for inclusion in the F-16 training system:

1. CAI plus lesson guide: An individualized digital computer-based instructional system whereby direct student-computer interface allows the automatic management and display of information to the student, the acceptance, processing and evaluation of student responses, the display of results, and the selection of subsequent learning events plus a worksheet containing the lesson (segment) identification number and title, an introduction, list of objectives, support information, graphics, practice items, and feedback to provide the student with a written record of all mediated presentations.
2. CAI plus videotape plus lesson guide: CAI plus lesson guide plus color television program stored on a tape cassette which may be operated by the student.
3. CAI plus videotape plus part-task trainer plus lesson guide: CAI plus videotape plus lesson guide plus training hardware designed to provide hands-on practice of a single or limited range of tasks which are cued and prompted by a videotape display.
4. Interactive part-task trainer plus lesson guide: Lesson guide plus part-task trainer that is wired to a computer to allow realistic responses to student manipulations. Cockpit

gauges, for example, respond to student pressure on the throttle.

5. Random access slide plus lesson guide: lesson guide plus visual slide projection system that allow slides to be presented in any order, rather than following the order in which they are put into a cartridge.
6. Motion picture plus lesson guide: Lesson guide plus 16mm or super 8mm color film projection system.
7. Videotape plus lesson guide: See 2 above.
8. Videodisc plus lesson guide: Lesson guide plus color television program stored on a thin plastic disc instead of a tape (as in 2 above), allowing random access, freeze frame, and motion.
9. Tape/Slide plus learning guide: Learning guide plus system for presenting audiovisual information by means of an audio tape and a series of synchronized projected visual slides.
10. Suitcase projector with audio and both still and motion visual plus lesson guide: Lesson guide plus portable desk-top screen for viewing audiovisual film strip loops that include both still slides and limited motion sequences.
11. Workbook plus lesson guide: Lesson guide plus printed booklet which includes lesson identification number and title, introduction, objectives, core idea information, discussion of core idea information, graphics, practice, and feedback.
12. Color workbook plus lesson guide: Lesson guide plus workbook as in 11 above, but with color graphics.
13. Workbook plus slides plus lesson guide: See 5 and 11 above.
14. Workbook plus audio plus lesson guide: See 11 above plus audio tape recording that may be reviewed by individual student with tape/player/or presented to group as in 21, 26 and 30 below.
15. Programmed text plus lesson guide: Lesson guide plus a printed text containing a sequence of small frames of information and required a simple written response from the student.
16. Training manual plus lesson guide: Lesson guide plus off the shelf technical publication such as F-16 Dash One, operator guide or maintenance manual.
17. Model/Actual equipment plus lesson guide: Lesson guide plus scale model or actual item of operational equipment used for training purposes.

18. CFT plus lesson guide: Lesson guide plus F-16 3-dimensional life-size cockpit mockup with screen for tape/slides located where head-up display would go.
19. CFT plus tape/slide plus lesson guide: See 9 and 18.
20. Lecture plus lesson guide: Lesson guide plus formal, stand-up podium expository presentation to a large class (10 or more).
21. Lecture plus audio and lesson guide: See 14 and 20.
22. Lecture plus visual motion plus lesson guide: See 20 plus 2-videotape or 6-motion picture above.
23. Lecture plus model/actual equipment plus lesson guide: See 17 and 20 above.
24. Lecture plus student response system plus lesson guide: See 20 above plus desk-mounted responders that allow all students to respond to instructor questions simultaneously and consequently guide lecture delivery based on real-time student comprehension.
25. Tutorial plus lesson guide: Lesson guide plus one-on-one student-instructor interaction loosely structured around a flexible format of objectives.
26. Tutorial plus audio plus lesson guide: See 21 and 25 above.
27. Tutorial and visual motion plus lesson guide: See 22 and 25.
28. Tutorial plus model/actual equipment plus lesson guide: See 23 and 25 above.
29. Seminar plus lesson guide: Lesson guide plus informal discussion loosely structured around a firm format of objectives for a small class (2 to 9 students).
30. Seminar plus audio plus lesson guide: See 21 and 29.
31. Seminar plus visual motion and lesson guide: See 22 and 29 above.
32. Seminar plus model/actual equipment plus lesson guide: See 23 and 29.

### 3.2 Performance Media

The following performance media were identified by the contractor and the F-16 OTD team for inclusion in the F-16 training system. Unlike the academic media, whose precise costs and characteristics are generally known, the performance media represent an assortment of devices whose costs and characteristics often have yet to be determined. Any conclusions drawn in this report, therefore, are somewhat tentative. The performance media selected were:

1. Panel mockup 1:1
2. Cockpit mockup 1:1
3. Stick and throttle (automated) trainer
4. SMS trainer (automated)
5. Avionics display (automated)
6. RWR trainer (automated)
7. ICPT
8. CFT
9. EPT
10. DSS
11. ASPT
12. OFT
13. OFT and NVS
14. OFT and DRLMS
15. OFT and EW
16. WST
17. F-16A aircraft
18. F-16B aircraft

### 3.3 Media Support Requirements Tables

The next four tables present the media support requirements, as described in Section 2.0, for each of the candidate media listed in Sections 3.1 and 3.2. Table 3.1 lists the personnel requirements for the academic media, while Table 3.2 lists personnel requirements for the performance media. The categories of personnel utilized are those listed in Section 2.0. Table 3.3 lists the facilities requirements for the academic media, and Table 3.4 lists facilities requirements for the performance media. Note that separate tables are not provided for the equipment or materials/supplies media support requirements. These may be obtained using Tables 3.3 and 3.4. Both equipment and materials/supplies are organized by facility in Section 2.0, and may be determined by using Tables 3.3 and 3.4 to define facilities required, and then turning to Section 2.3 or 2.4 to determine the equipment and materials/supplies required for that facility.

The tables consist of media-by-support-requirements matrices, allowing one cell or box to represent the intersection of each medium with each requirement. An X in a box means that the resource is required to support the medium. An empty box

with an X, means that the resource is not required in order to support the medium. For example, the lower most left box contains an X, indicating that the medium "CAI plus lesson guide" requires the resource "Computer Programmer." The upper most right box is empty, indicating that the medium "lecture plus student response system plus lesson guide" does not require the resource "Flight Instructor."

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# SIMULATION MEDIA

	1	Panel Mockup
	2	Cockpit Mockup
	3	Stick & Throttle Trainer
	4	SMS Trainer
	5	Avionics Display
	6	2-D Device
	7	RWR Trainer
	8	ICPT
	9	CFT
	10	EPT
	11	DSS
	12	ASPT
	13	SAAC
	14	OFT
	15	OFT + NVS
	16	OFT + DRLMS
	17	OFT + EW
	18	WST
	19	F-16 A Aircraft
	20	F-16 B Aircraft

PERSONNEL

INSTRUCTORS

FLIGHT

ACADEMIC

SIMULATOR

TRAINER

LEARNING CENTER

LEARNING CENTER

OPERATOR

SUPERVISOR

COMPUTER FACILITY

PROGRAMMER

OPERATOR

MANAGER

TRAINING DEVICE

OPERATOR

MANAGER

MAINTENANCE

LESSON UPDATE

DESIGNER

SME

MEDIA SPECIALIST

PRODUCTION SPECIALIST

COMPUTER PROGRAMMER

TABLE 3.2  
PERSONNEL REQUIREMENTS FOR PERFORMANCE MEDIA

ACADEMIC MEDIA

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	FACILITIES
	CAI + Lesson Guide	CAI + Videotape + LG	CAI + Videotape + Part Task Trainer + LG	Interactive Part Task Trainer + LG	Random Access Slide + LG	Motion Picture + LG	Videotape + LG	Videodisc + LG	Tape Slide + LG	Suitcase Projector + LG	Workbook + LG	Color Workbook + LG	Workbook + Slides + LG	Workbook + Audio + LG	Programmed Text + LG	Training Manuals + LG	Model/Actual Equipment + LG	CFT + LG	CFT + Tapeslide + LG	Lecture + LG	Lecture + Audio + LG	Lecture + Visual Motion + LG	Lecture + Model/Actual Equipment + LG	Lecture + Student Response System + LG	Tutorial + LG	Tutorial + Audio + LG	Tutorial + Visual Motion + LG	Tutorial + Model/Actual Equipment + LG	Seminar + LG	Seminar + Audio + LG	Seminar + Visual Motion + LG	Seminar + Model/Actual Equipment + LG	LEARNING CENTER
X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	CLASSROOMS
X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	TRAINING DEVICE
X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	COMPUTER
X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	LESSON DEVELOPMENT
X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	PRODUCTION/REPRO

TABLE 3.3  
FACILITIES REQUIREMENTS FOR ACADEMIC MEDIA  
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## SIMULATION MEDIA

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TABLE 3.4  
FACILITIES REQUIREMENTS FOR PERFORMANCE MEDIA

#### 4.0 MEDIA SUPPORT CONSIDERATIONS

As indicated in Section 1.0, the purpose of this document is primarily in making media decisions, not in implementing those decisions. The cost study, development report no. 21, is the appropriate document for that level of detail. This report is most usefully employed before any training media have been selected or procured.

This report is most useful in specifying the support required by the academic media. The performance media are not nearly as familiar to the contractor or the F-15 OTD team, so that very little first-hand knowledge was available in developing this report. Some of the more complex trainers, such as the WST, will not be available for at least five years, and their configuration and capabilities are likely to change considerably before they are delivered. This lack of precise information has necessitated a far more general description of performance media that is desired. As training device information becomes available, this report will be updated to represent a more versatile planning and decision-making tool.

**DAT**  
**ILM**